

## **Historic, archived document**

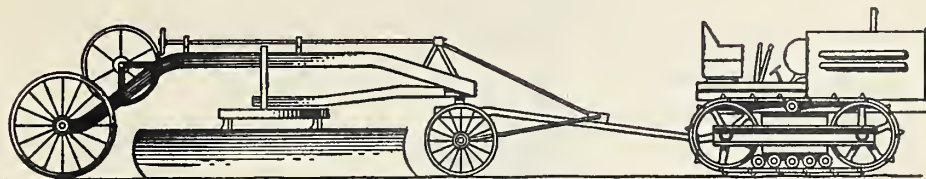
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U. S. Department of Agriculture

# CONSTRUCTION



## HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE  
WASHINGTON, D. C.

Volume 6

May, 1940.

Number 5

Volume 5, Number 8, October 1939 issue of Construction Hints described a method for the conversion of dump truck hydraulic pumps to hydraulic grader operation. Region 8 has furnished the drawing on page 2 of this issue, which shows the details of a relief valve and universal joint which has been added to the pump arrangement by the Arkansas State CCC.

The sketch shown on page 3 is that of an improved screen for Diesels, designed by G. O. Fullerton, Camp F-23, Walhalla, Manistee National Forest. It is made by fitting a chamois skin around a section of 1-1/4" well screen which in turn is fitted to a regular TD-40 strainer. The unit does not take water out of the fuel oil since it is under pressure but it does get the dirt.

On page 6 are corrections to Lubrication Guide which was published as the December 1939 issue of Construction Hints. This page is published in duplicate so that the second copy can be detached and posted in the Camp Shop. An extra supply of this issue will be available and those who received Lubrication Guide should request the additional copies of this issue desired.

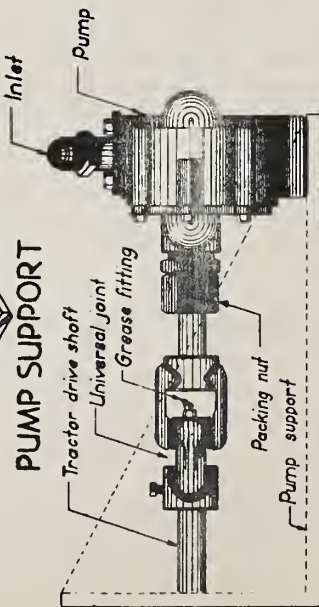
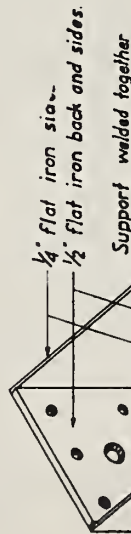
E. S. MASSIE, Jr.,  
Editor.

# SKETCH SHOWING

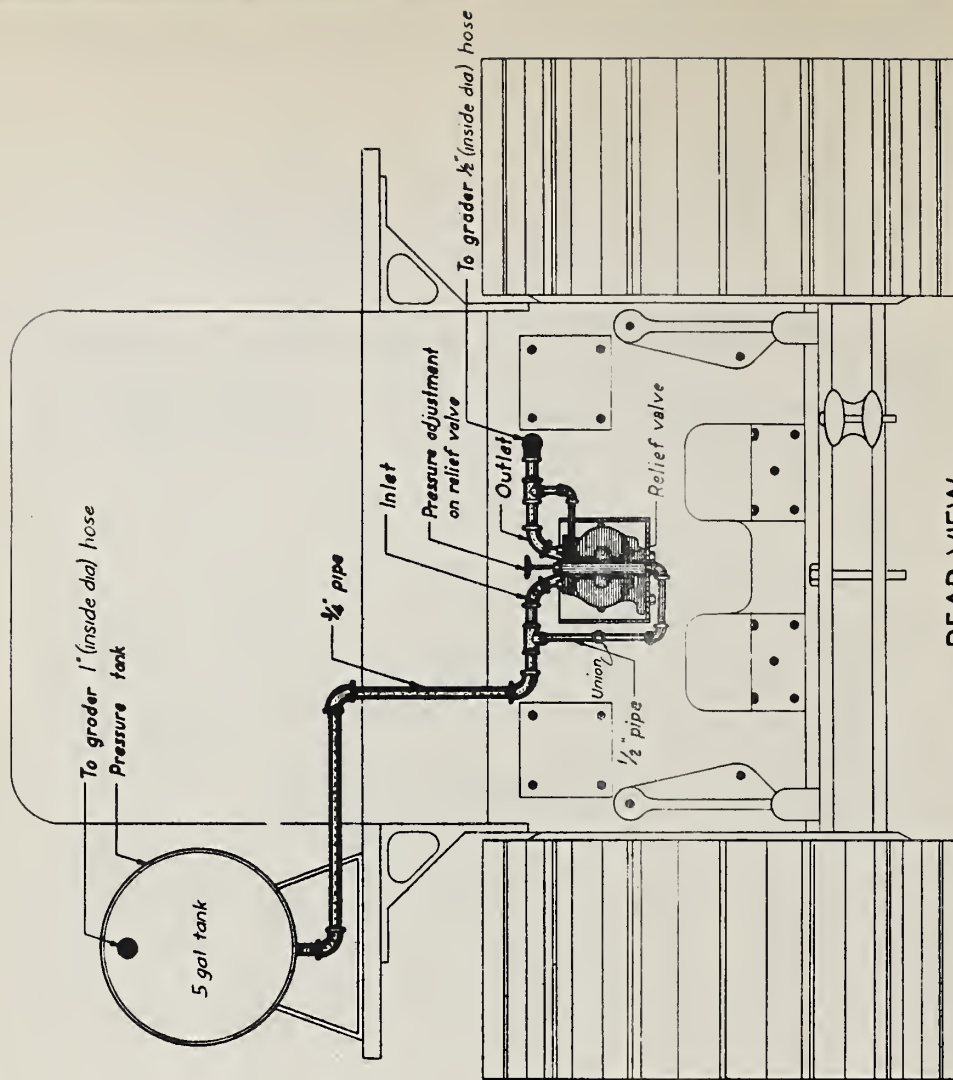
## CONVERSION OF DUMP TRUCK HYDRAULIC PUMP TO HYDRAULIC GRADER OPERATION

Supplement to article in "Construction Hints"  
Volume 5, No. 8, October 1939, Pages 2 and 3.

ARKANSAS STATE-CCC.



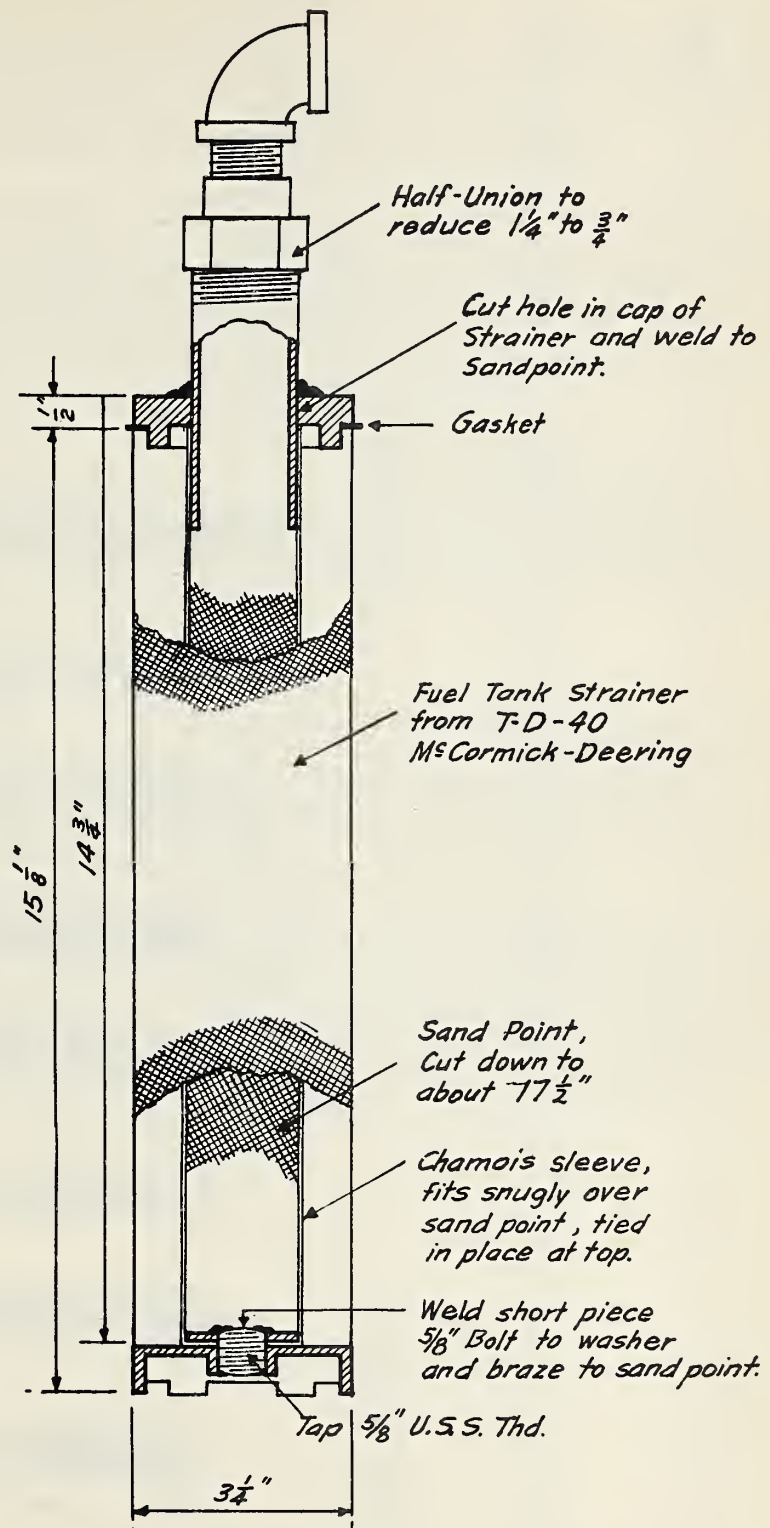
SIDE VIEW  
Hydraulic pump with coupling  
Scale 3" = 1'-0"



REAR VIEW

Assembled hydraulic unit mounted on tractor  
Approximate scale: 1" = 1'

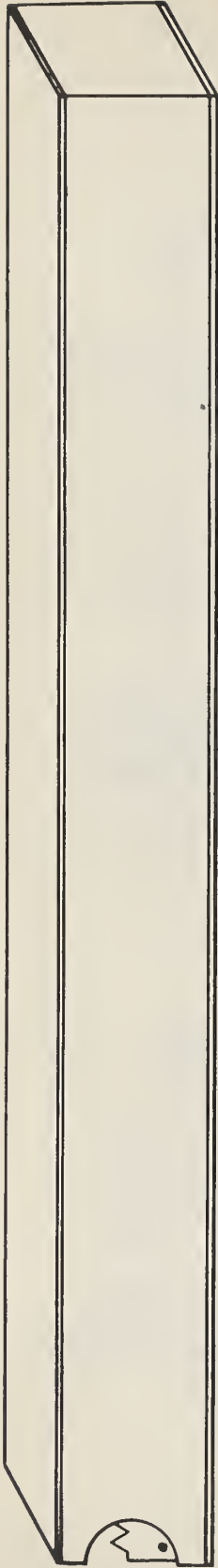
DRAWN BY	DATE	CHECKED BY	DATE	APPROVED	DATE
HIBBARD	3/16/40	V. C. H.	3/22/40	P. H. H.	3/22/40
CENTRAL DRAFTING OFFICE, CAMP P-18					
3062					



Scale  $1" = 3"$

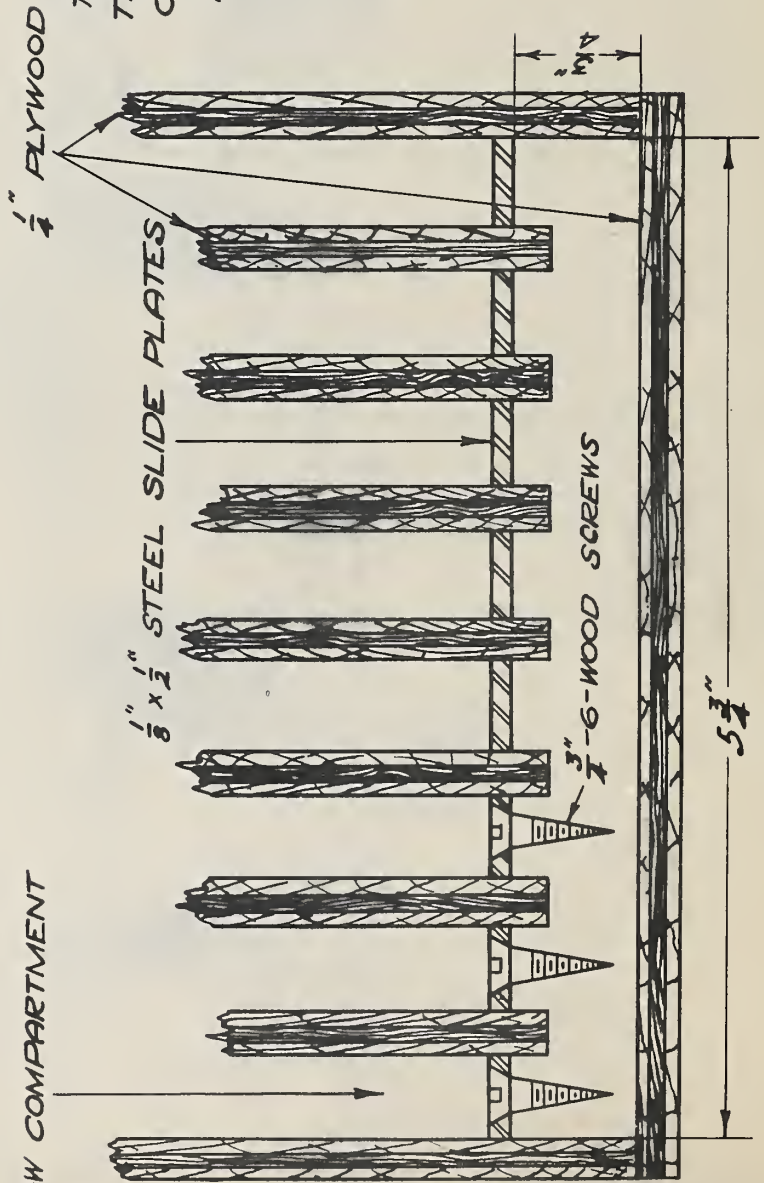
DESIGNED BY G.O. FULLERTON  
DRAWN BY J.S. RICE 8/27/39





SAW COMPARTMENT

TOP OF BOX TO BE GROOVED  
THE SAME AS THE BOTTOM,  
OMITTING STEEL SLIDE  
PLATES.



END VIEW

U. S. FOREST SERVICE, REGION 6  
MECHANICAL IMPROVEMENTS & REPAIRS  
SAW BOX FOR 8 SAWS

SUBMITTED BY HENRY ELDERKIN  
FOREST SNOQUALMIE DATE: 5-1-40  
PORTLAND, ORE. SKETCH 072

The information below is submitted by Mr. Jack Clark, supervising mechanic, Rogue River National Forest, Region 6. The following is Mr. Clark's description of improvements he has put into use on the "50" gas Caterpillar tractor and Chevrolet trucks:

"We have three "50" gas Cats and they have always seemed to be under-powered to handle a trailbuilder as they should. So, when the bevel gear groups became worn and needed replacing, instead of the standard group costing \$72.10, we installed lower gear group (Caterpillar #6B-1221) costing \$83.65. The lower gear reduced speed of Cat. .2 miles per hour in first gear, .21 miles per hour in reverse and a comparative reduction in other gears.

"More work can be done, and it is easier on machine and operator, as lower gears eliminate "bucking". We have operated our Cats one season since lower gears have been installed, and everyone connected with road construction, including operators, is well pleased with results.

\* \* \* \* \*

"The replacement of Chevrolet 4-speed transmission covers and gearshift levers can be reduced to a minimum by drilling, tapping and installing 1/8 inch grease fitting in transmission cover 5/8 inch down from point of entry of gearshift lever, and greasing every 250 miles with transmission lubricant."

Comment: Mr. Clark's point on the use of slightly lower gearings for the "50" gas Caterpillar tractor is very well taken and the statement that this particular model is under-powered when using standard gears is entirely correct. When beveled gear groups become worn so they definitely need replacing, it is a very good time to consider the lower gear group as a replacement as these will not only favor the tractor, but also will provide a much more satisfactory operation.

## CONSTRUCTION HINTS

## LUBRICATION GUIDE

### CORRECTIONS

Vol. 5

December, 1939

No. 10

- Page 2. Under FS-G3, delete "gear boxes and power transmissions".
- Page 3. Under column headed "Standard Oil Co. of New Jersey", add "Pa., La., and Colonial Beacon." In other words, the products in this column are marketed by all of the above companies, under the same trade names.

In the same column; line FS-04, change "Essoleum Gear Oil" to "Essolube Gear Oil"; line FS-G4, change "Essoleum B & C" to Essoleum C and Universal Wheel Grease"; lines FS-G6 and FS-G7, change spelling of "Surrett" to "Surett"; line FS-WP, change to read: "Essoleum waterproof grease".

Under column headed "Standard Oil Co. of Calif.", lines FS-G6 and FS-G7, delete "Calumet Compounds" and substitute "Calol Pinion Grease No. 1 and No. 2," respectively. The Calumet compounds are satisfactory, but are products of the Standard Oil Co. of Indiana.

Under column headed "General Petroleum Corp. of Calif.", line FS-G9, insert "Gargoyle Mobilgrease No. 2".

Under column headed "Texas Oil Co." change heading to read: "Texas Co.". Line FS-03, delete "Thuban" and insert "Texaco Hypoid Lubricant"; line FS-04, delete the word "compound".

- Page 4. Water Pumps - delete "Ford '37" and "others", also delete "3065" in both columns.
- Page 5. Crusher Units - Tractor Type - Drive Pulley bearings, add the word "plain". Insert below "anti-friction" and "G-3" in both columns.
- Page 6. Shovels - Osgood. Delete heading and everything pertaining thereto. Use recommendations under "Shovels and Draglines (General)".
- Page 7. Caterpillar - Flywheel Clutch Collar Shaft, recommendation "G-5" applies to Models 20, 25, 28, 30, and 60. The footnote, bottom of page, applies to "Track Rollers".
- Page 8. Cletrac - Power Transmission - Track Wheel System, delete "(all types)". Add, "If high pressure type", G-4 (Summer) and G-3 (Winter).



**CORRECTION SHEET  
FOR  
LUBRICATION GUIDE**

**TO BE DETACHED AND  
POSTED IN CAMP SHOP**

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